

# **Towards a Sustainable Development of the Agricultural and the Handicraft Sectors:**

## **-The Case of Chiang Mai's Economy-**

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# 1.Introduction

## 1.1 Background

Thailand is one of Asia's economic leaders and is one of the fastest-growing economies in the area (BOI 2009). Thailand is one of the ASEAN Member States and plays significant roles, serving as a gateway to Southeast Asia. The Thai government has made efforts for development of its nation, nevertheless they have faced economic and political crisis several times, such as the Asian Financial Crisis in 1997, and the global economic crisis and the political disruptions in 2008. The average of growth rate of GDP over the past 19 years from 1990 to 2008 was about 4.14%<sup>1</sup> (ADB Key Indicator 2009). Having constructed the "Thailand National Economic and Social Development Plan" in 1961, which is aimed at helping people to achieve greater happiness and a better quality of life with economic and social development, the Thai government has taken different measures to carry out their goal and has amended the plan every five years for further development.

This growth and effort for development cannot be explained without the contribution of Chiang Mai's economy. Chiang Mai is a province in the northern region of Thailand, located 720 km from the capital, Bangkok, and it is considered one of the most important cities in the country after Bangkok. In recent years, Chiang Mai has become well known for its growing tourism industry with its rich history and traditions. Chiang Mai was the capital of the Lanna Kingdom, and Lanna traditions and activities have been passed from generation to generation for the past 700 years. With its history and traditions from ancient times, the agricultural sector and the handicraft sector have remained as Chiang Mai's main industrial sectors. However, both sectors have faced various challenges to sustain themselves under the pressure from rapid growth of the domestic and world economies, and the changes of society. It is essential for both the agricultural sector and the handicraft sector to overcome these challenges to keep up with the progress of a rapidly growing economy and achieve sustainable development.

## 1.2 Research Objectives

Our research objectives are summarized into three parts:

- 1) To investigate the current situation in the agricultural sector and handicraft sector of Chiang Mai's economy.
- 2) To examine the impact of each sector on the economy.
- 3) To find ways to overcome challenges for sustainable development in the agriculture and handicraft sectors.

## 1.3 Research Questions

Following the above mentioned research objectives, we have set two research questions:

- 1) What are the limitations that the agricultural sector and the handicraft sector encounter?
- 2) How can the limitations found be overcome to ensure sustainable development?

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<sup>1</sup> Writer's calculation, using the data from Asian Development Bank, *Key Indicators for Asia and The Pacific* (constant rate at 1988)

## **1.4 Research Methodology**

**Data Collection:** Before going for fieldwork, we obtained a macro-view of Chiang Mai's economy and local economy from literature review, previous data, and the statistical data provided by relevant government offices. After returning from fieldwork, we have updated the information with the latest statistical data we obtained.

**Interview and Observation:** During the fieldwork, we conducted interviews with representatives of related government offices, other organizations, authorities (15 places), farmers (12 households), self-employed workers in the handicraft sector (12 people), and employees of handicraft factories (21 people) in Chiang Mai. The results of the interviews were complimented by the observations.

**Data Analysis:** We analyzed results by: 1) comparing the macro—data from the governmental offices and the micro-data from the interviews; 2) comparing the perceptions of the government with that of the local people; 3) finding similarities and differences between the agricultural sector and the handicraft sector; and 4) determining to what extent they have reached sustainability and proposing new ways for further sustainable development from the above analysis and from the conclusions.

## **1.5 Components of the Report**

In section 1, we briefly explain the general information of the Chiang Mai economy in Thailand, the significance of the study, and the structure of our research, which consists of research objectives, research questions, and research methodology. The definition of sustainable development is described in Section 2, and the roles of the government are described in Section 3, based on briefings we received and interviews. Sections 4 and 5 are used to describe our findings from the result of the interviews of farmers, self-employed workers in the handicraft sector and employees of handicraft factories, and is divided into 8 categories: 1) overview of the sector; 2) working conditions; 3) income generation; 4) market network; 5) perception of services of governments/organizations; 6) infrastructure; 7) training skills; 8) environment. In Section 6 we conclude the analysis and determine the sustainability in the present situation. In Section 7 we propose recommendations for improvement for further sustainability in both sectors and in Chiang Mai's economy.

It is relevant to mention that for this report the concept of “Chiang Mai's economy” is based on the literature review and the specific case study performed by our own field survey.

## **2. Definition of “Sustainable Development”**

### **2.1 Definition in the International Context**

In the present report we attempt to give the definition of “sustainable development” first in an international context, then in a national Thai context, and finally in a local Chiang Mai context. The last one will be created based on our conclusions of the fieldwork.

There are many definitions of sustainable development. The best known and most quoted definition in a

worldwide context comes from the definition the United Nations World Commission on Environment and Development, later known as the Brundtland Commission, given in 1987 in its well known report “Our Common Future”. Sustainable development is defined as “Development that meets the needs of the present without compromising the ability of future generations to meet their own needs.” The term involves the economic and social activities of human beings in present generations that are achieved in consonance of preserving the natural environment, so that future generations can enjoy the same qualities of life as the present generations.

The report “Our Common Future” is comprised of several statements which altogether will give the final definition, but conceptually the three constituent parts - environment, economics and socio-politics respectively, are referred in the following statements:

- Social sustainability in statement 4: “Sustainable development requires meeting the basic needs of all and extending to all the opportunity to satisfy their aspirations for a better life.”
- Economic sustainability in statement 6: “Sustainable development requires that societies meet human needs both by increasing productive potential and by ensuring equitable opportunities for all.”
- Environmental sustainability in statement 9: “At a minimum, sustainable development must not endanger the natural systems that support life on Earth: the atmosphere, the waters, the soils, and the living beings.”

## **2.2 Definition in the Thai National Context**

Sustainable Development within the Thai national context can be defined as the development in which Thai nationals satisfy their needs without compromising the ones of future generations and where other factors are also considered in the process of implementation of activities that will ensure the satisfaction of needs in the present as well as in the future. Sustainable development involves a developmental stage of a country in which the economy will serve mainly as a means for the population to enjoy happiness and better quality of life. This concept in Thailand has evolved from the previous segmented approach to a more holistic and integrated approach where a balance is obtained between the society, the community, the economy, the natural resources and environment, and good governance overall. Additionally, the government places emphasis on maintaining a balance between the society’s internal foundations and its resilience to the external changes that result from a globalizing world. The Thai government also gives special importance to the internal foundations and resilience of the society to the external changes. These external changes are very common nowadays because Thailand’s economy has an active participation in the globalizing world. Additionally, sustainability enables the people and the system to be aware of the future so that they can adjust to it easily. Development policies aimed at sustainability orient the country’s nationals to a greater self-reliance and integrate all dimensions of development including the human, social, economic, environmental, and political aspects. Sustainability in Thailand involves working with the new concept of ‘Creative Economy’, which is a concept that strongly considers the use of creative assets, cultural industries, or other cultural or artistic productions to potentially generate economic growth and development.

According to Thailand’s Tenth National Social and Economic Plan and Creative Economy, sustainability will be achieved when the economy successfully functions with factors such as energy efficiency, savings, economic stability, equal income distribution, strong financial institutions, solid infrastructure and fair competition, without compromising the environment, to guarantee Thai nationals a better standard of life for the present and for future generations to come.



## 2.3 Definition in the Chiang Mai Local Context

The definition of Chiang Mai in the local context is given in the “conclusion section” because it is based on the field research.

## 3. Overview of Chiang Mai's Government

Thailand is a constitutional democratic monarchy in which the Prime Minister is the head of the government and the hereditary monarch, the head of state. Thailand has three powers of state: executive, legislative and judiciary and the three of them are independent branches. The Kingdom of Thailand and the former Kingdom of Siam were absolute monarchies until 1932, when the country had a “democratic revolution” and the country officially became a constitutional democratic monarchy. In general, Thai administration consists of the central government, regional governments, and local governments.

Thailand is made up of 76 provinces plus the metropolitan area of Bangkok. The province of Chiang Mai, is said to be the second most important city (or province) of Thailand after Bangkok and the most important province of Northern Thailand. Chiang Mai, founded as the capital of the Lanna Kingdom (Kingdom of a Million Rice Fields) by King Mengrai in 1296 A.D. is located 720 km from Thai's capital. It has an elevation of 1,027 feet (310 meters) above sea level and borders to the north with Shan State and Myanmar, to the south with Tak province, to the east with Chiang Rai, Lamphun and Lampang provinces, and to the west with Mae Hong Sorn province (TAT 2009).

Provinces are further divided into districts where each district has its own district office with the district head being the highest authority. The province of Chiang Mai has 24 districts in total. Districts are further subdivided into sub-districts or what is better known as *tambons*. *Tambons* are subdivided into villages and the village headman is the highest authority of each village.

The fieldwork was conducted specifically in San Pa Tong District, San Kum Pang District, Hang Dong District, and Mae Wang District. Out of these districts, offices that were visited at a district level were San Pa Tong District office and Mae Wang District office. District offices in Thailand have their own development plans usually for a period of three years. The development plans that could be obtained and analyzed (San Pa Tong's and Mae Wang's respectively) cover all the areas at a district level, specifically the economic sector including issues concerning the agriculture, industry, handicraft, banking and personal income of the inhabitants, the education sector, the health sector, environmental sector, the communication network, good governance, and additional social issues that need to be dealt with such as drug use, among others. Essentially the plans will seek to improve the quality of life of the people. Both plans are also responsible for sub-district and village issues, regardless of the latter having their own development plans. The Development Plans analyzed also enlist the problems the Districts have and these problems will be dealt on the subsequent plans.

As for the sub-district or *tambon* level, the Thung Satoke Tambon Office – TAO (San Pa Tong District) and the Mae Win Tambon office (Mae Wang District) were visited. These TAO offices also have their own development plans, usually for 3 years. In the plans, the *tambon's* strengths, weaknesses, and potentials are listed and described in detail. Usually these development plans will include issues on OTOP products (One Tambon - One Product) and focus on the human capacity of the inhabitants. The Mae Win TAO office for example, since the

area is located in the highlands, highly promotes ecotourism and the preservation of the environment.

In regards to the village level, interviews were conducted with village headmen of Baan HuaRin Village and Mae Sapok Village (Mae Wang District). Public hearings are held in the villages. In these hearings representatives from various sectors within a village (teachers, farmers, workers, or others) participate and express their needs or immediate concerns.

## **4. Agricultural Sector**

### **4.1 Overview of Agriculture in Chiang Mai's Economy**

Chiang Mai's economy can be classified into two main sectors: the agricultural sector, contributing to 18% of the Gross Provincial Product (GPP); and the non-agricultural sector contributing to 82% as shown in 2008 statistics of Thailand's Office of the National Economics and Social Development Board (NESDB). Based on the time series data from the NESDB's statistics, agriculture's share in GPP has been fluctuating in the last decade but has shown an increasing trend.



**Photo 1: Farmers sorting longan at a factory**

A variety of fruits, crops and vegetables are produced in Chiang Mai. Geographically, the province is divided into the lowland area and the highland area. The lowland areas, with abundant water supplies, are utilized for the production of vegetables, staple and cash crops including rice, soybean, onion and garlic. The highland areas with fewer water supplies are utilized for growing perennial fruit trees such as orange, longan and lychee. These products have been sold domestically and exported abroad. In 2006, the important economic crops (orange, rice, longan, onion, garlic and lychee etc.) contributed to more than 10 thousand million baht (equivalent to 300 million US\$<sup>2</sup>) to Chiang Mai's economy (according to NESDB's statistics Chiang Mai's GPP in 2006 is 110336

million bath which is equivalent to 3308 million US\$) (Phaisal Lekuthai 2009 p.21). As for the highland's agricultural activity, it is said that the hillside population does not directly contribute to nor benefit from the rapidly growing markets of Chiang Mai, since those highland communities are far away from the main market like Chiang Mai City, and their agricultural skills are incomparable to that of the lowland population. Highland cultivation of fruit trees is often found in areas with low flooding and good irrigation effects during the rainy season. Expanding fruit tree production from lowland plantations onto slope-land can provide important sources of income for small-holder, highland populations.

In general, because most of the agricultural products are perishable, prices, especially from the main fruits such as longan and lychee, fluctuate widely due to seasonal effects. Seasonal effects in this context refer to the

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<sup>2</sup> Exchange rate as of October 28, 2009, 1US\$=33.35THB

fluctuation in the supply of agricultural products. When there is oversupply, prices will drop; whereas, when there is shortage of supply, prices will increase. The price of longan, for instance, during the normal season, is very low due to oversupply, and this lowers the income of farmers. However, recently, some farmers have managed to produce fruits during the off-season period. They have learned to use chemicals such as potassium to force longan or lychee to bear fruit before or after the normal cultivating season. Fruits during the off-season period can be sold at prices four times higher than on-season prices. Regarding income generated from off-season production, some farmers said they earn more income. At the same time, some other farmers said they are unable to make much profit from off-season production because of high input costs. As for rice, because it is not so perishable, the prices vary depending on the duration of storage, meaning that if the product is stored for a longer period, the price will be higher.

The younger generations of farmers acquire agricultural skills from their parents and schools and they also have the opportunity to observe the work of successful farmers and study methods of nursery, grafting, transplant, and the production of organic fertilizer and organic insecticide. However, according to the data of the National Statistical Office (NSO) of average wage by industries, agricultural workers earn the lowest income of all the industries. For this reason, there is an increasing trend for farmers to have part-time jobs in agriculture and seek permanent jobs in other promising industries such as the service industry or the manufacturing and informal sectors.

According to the NSO, the labor force in agriculture is 49%, and 51% is accounted for by the non-agricultural sector. As an average wage, agricultural workers earn almost 3 times less than the non-agricultural sector workers (Phaisal Lekuthai 2009 p.14).

## **4.2 Agriculture in San Pa Tong and Mae Wang District**

In Mae Wang district, farmers are specialized in producing onion, which is reflected in the district's motto: "We Produce the Best Quality of Onion". Besides onion, they also produce rice, longan, chili, beans, sweet corn, tomatoes, potatoes, flowers and other vegetables. Also, there are three Royal Projects being implemented.

The focus is more on the production than the marketing of their agricultural products. However, they face some challenges because when the products are oversupplied, prices decrease and they do not have enough capacity to store in order to be able to sell when prices increase. This is one of the reasons that there are big gaps between the prices at which the middleman buys from farmers and the consumers' price.

Geographically, San Pa Tong District is different from Mae Wang as it is located in lowland with only a small mountainous area. This district also emphasizes agriculture because of its geography and for a long time, the main job of the population has been farming. According to the district chief, the main agricultural product in San Pa Tong is longan, of which farmers can produce on average of 10,000 kg per year. Longan prices drop sharply when it is oversupplied, causing farmers' income to drop. To solve this problem, farmers adopt an exchange of labor strategy to allow them to cut the production cost. Besides longan, sticky rice is also one of the main products of San Pa Tong District. One of the current activities the district is implementing is aimed at improving the quality of San Pa Tong sticky rice. The district has created the agricultural research center and agricultural college, which is a non-formal education centre offering training to farmers.

Although farmers in both districts are increasingly using organic fertilizers, because of the low productivity from organic fertilizers, chemical fertilizers are still used. Therefore, the solution for farmers is to use a combination of organic and chemical fertilizers. Recently, research is being conducted to improve the productivity

of organic fertilizers.

## **4.3 Roles of the District Agricultural Office (in San Pa Tong)**

### **4.3.1 General Information**

The district agricultural office functions under the Department of Agriculture, Ministry of Agriculture and Cooperatives, and follows their policies and promotions. The office has various functions: to manage natural disaster, such as estimating damages of floods; to manage farms in the district (rice and vegetables); to enhance public relations; to announce necessary information to all the farmers by use of 20 community radio stations; to protect people from disease caused by pesticide; to support community enterprises; to educate the young generation about agriculture; to promote productivity and value-added products; and to record the data and statistics for analysis. In order to make these public services accessible to farmers, the agriculture transfer office is set up to the level of the TAO. The agriculture office sends one officer specialized in agriculture to the TAO to analyze production plan.

### **4.3.2 Motto and Aims**

Setting the motto of the office as “Real Friend of Farmers,” an annual public hearing is held by the district agricultural office to analyze the performance over the last year and to exchange ideas for next year. The office considers it their strength to have a close relationship with farmers. Based on the motto, they aim at: 1) enhancing productivity of farmers; 2) improving capacity of farmers to increase competition; 3) providing services for farmers to access for consultation; and 4) conducting research and development to enhance agriculture (District Agricultural Office booklet, p.11).

### **4.3.3 Strategies and Activities**

With these aims in mind, the office works to improve the current situation. They focus on strategies and activities such as dealing with seasonal effects, enhancing marketing, and promoting training.

Firstly, to reduce the burden of farmers caused by oversupply, the office conducts price support through a guarantee scheme - the office buys the oversupplied products from farmers, keeps them in government storage and sells them in low season at a higher price. The main product they deal with is rice.

Secondly, to develop marketing, they consider that improving productivity and competitiveness are key elements. As a marketing strategy, the office holds workshops to teach farmers how to grow longan in the off-season period to respond to constant demand throughout the year. They recruited three TAOs to conduct the seminars and 21 farmers from each TAO attended the practical seminars held at the farm sites. In addition, they hold workshops on food safety to raise the quality of the products to meet the international standard known as “GAP (Good Agriculture Practice)”. The training was given to 375 people last May. Moreover, training for using quality seeds is held as well, to produce better products that can be competitive in the market.

Moreover, various trainings are held to improve current situations. For example, promotion of the concept of sustaining self-sufficiency is carried out. A budget of 40,000 baht is allocated for training for the leader of each TAO. This training is conducted at the learning centre of the Royal Project, which has a total budget of 111 million baht allocated for the construction of a demonstration farm as a model of efficiency for people to follow. This program has trained 200 people since June, 2009. Also, the promotion of production science green house technology, technology of food processing, and preservation of foods are introduced to farmers as ways to deal

with seasonal effects and raise their competitiveness in the market.

#### **4.3.4 Difficulties**

Despite the plans and efforts of the district office, they still face several difficulties. One of the serious issues they deal with is flooding. There is a flood every year in the district. In the past, they planned to construct a big water reservoir as one way to reduce the damage from floods. However, even though the budget was approved, the local people were against the idea, as they would have to be relocated by the construction. Therefore, the plan was not carried out. As a result, the office has to implement an alternative plan to protect the people and their agricultural production from the damage of floods. Another difficulty is oversupply of longan and onion, which can only be kept for one month without cool storage, or two to three months with it. As the amount of storage is limited, it is necessary to find other ways to deal with seasonal effects. Moreover, there has been a decrease in the demand of onions. One of the reasons reported is that Japan has stopped importing onions from Thailand. Therefore, the farmers are forced to look for other destinations for their products to sustain their business.

### **4.4 Agriculture Cooperative**

#### **4.4.1 General Information**

The San Pa Tong agriculture cooperative is a district-level cooperative. Generally, in Thailand, the agriculture cooperative exists only at the district level.

The San Pa Tong agriculture cooperative has 6,800 (70% of farmers) household members in two districts Mae Wang and San Pa Tong (these two districts formerly were only one district and just recently separated; therefore, this agriculture cooperative covers 2 districts which is different from other agricultural cooperatives). The cooperative is divided into 109 groups, one group in each village.

In this agriculture cooperative, there are four main occupations of farmers: 1) rice farmer; 2) soy bean farmer 3) onion farmer and; 4) longan farmer.

In the past, around 80% to 90% of members were rice farmers, and only 10% to 20% were longan farmers. However, as the price of rice is decreasing, the number of longan farmer is increasing. In recent years, 60% of farmers are mainly producing longan and 40% are mainly producing rice<sup>3</sup>.

#### **4.4.2 Membership Fee**

Each and every member has to pay a 50 baht entrance fee, which is non-refundable. Besides this fee, they have to pay 365 baht as an initial deposit to open their agriculture account. This deposit will be refunded when members decide to withdraw their membership from the cooperative. In case members retire and withdraw their membership from the cooperatives, they are entitled to receive 500 baht. They also can buy shares in the cooperative and the money will also be refunded when members withdraw from the cooperatives.

#### **4.4.3 Departments and Services:**

The agriculture cooperative has 11 departments to organize the activities and provide a variety of services for farmers.

1) On the top is the administration department. The members of the cooperative elect the chairman and the

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<sup>3</sup> This is unofficial data which was presented at the cooperatives. Some farmers have several products for farming, yet rice and longan are still main products in the district.

elected chairman employs one manager.

- 2) The credit department provides loans to the members. The loans are provided to members only, but if the saving is sufficient, the credit department may provide loans to other organizations to make more profit. The agriculture cooperative not only provides the saving service, but also sells cooperative funds to the members.
- 3) The accounting department is in charge of corruption prevention.
- 4) The finance department manages the capital for the whole cooperative, including accounting, capital formation, and capital flow.
- 5) They operate a supermarket, from which members can buy goods at a cheaper price. Moreover, they can accumulate the points based on their amount of consumption and these points can be exchanged for cash or agricultural inputs at the end of the year.
- 6) The gas station of the agricultural cooperative offers members a cheaper price as well as points.
- 7) The agricultural material department sells the agricultural input materials, which include fertilizer and machinery.
- 8) The output department manages all of the output. Lower prices and fair measuring services<sup>4</sup> are offered by the agriculture cooperative when they buy the agricultural output from members. In addition, the more the farmers sell to this department, the more points they can receive in the end of the year.
- 9) The processing plant is in charge of processing the dry longan and providing cool storage. However, the cool-storage facilities, which are very important for selling longan, mostly belong to the middleman. The agricultural cooperative owns only one plant.
- 10) The general administration department sometimes provides free services to the members, such as lending cool storage facilities and trucks.
- 11) The welfare department was created so that original members get higher dividends.

#### 4.4.4 Additional Members

Besides the original members, there are 4,800 additional members. Additional members are not farmers but can access some cooperatives' services; for example, teachers and government officials who have stable income can access the gas station services and supermarket services. Although they cannot enjoy the full range of services that the original members do, they are entitled to these four services:

- 1) Low prices at the agriculture cooperative supermarket.
- 2) Lower price of gasoline.
- 3) All of the benefits of the agricultural input service.
- 4) Higher savings interest rates on deposits. However, the additional members cannot enjoy the low loan interest to which the original members are entitled.

#### 4.4.5 Agriculture Project Process

The San Pa Tong agriculture cooperative sets the agricultural product projects and distributes it to the different members. After the harvest, they buy the product from the farmer for a slightly higher price than the middleman.

In addition, the farmers who join the project can receive seeds from the agriculture cooperative. Furthermore, the agriculture cooperative will check the farmers' fields to ensure the quality and give fertilizers to those who do

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<sup>4</sup> Some merchants try to deceive farmers by measuring the rice unfairly (by manipulating the meter). This service exists to give the farmers a fair price.

not include intensive chemicals.

For rice farmers, the cooperative will lend trucks free of charge. Farmers need only to pay for the gasoline. For soya beans, because there is strong competition between the middleman and cooperative, transportation is free of charge.

#### 4.4.6 Members' Welfare

In order to increase membership seven welfare programs have been created:

- 1) For families with newborn babies, the cooperative will open a bank account with a 500 baht initial savings plus a gift.
- 2) On a needs basis, it is possible for some of those babies to apply for a scholarship when they grow up and ready to go to school.
- 3) When members get sick, they receive a partial rebate on medical treatment if they bring the receipt to the agriculture cooperative. The maximum rebate is 2,000 baht. In addition, if the members have to stay in the hospital for treatment, the agriculture cooperative can pay for the room, but not more than 200 baht.
- 4) The cooperative pays 300 baht per month if the member is over 70 years old.
- 5) The agriculture cooperative pays 97,000 baht for the death of a member.
- 6) If members suffer damage from flood or fire, based on the situation, the cooperative offers financial support.
- 7) In order to maximize benefits for the supplier members, the agriculture cooperative takes the following additional measures:
  - ① offering a slightly higher price than the market price
  - ② paying up to the full amount in cash
  - ③ measuring carefully to ensure the full weight is measured
  - ④ offering special bonuses according to the amount sold.
  - ⑤ allowing farmers to pay back their loans by selling products to the cooperative, depending on the amount sold
  - ⑥ selling stock which amounts to one hundred baht per share with a 6.5% profit per share at the end of the year<sup>5</sup>
  - ⑦ generally, offering a loan interest rate of 4%--the cooperative members who make purchases at the supermarket also receive a 4% reimbursement
  - ⑧ offering a 0.5% rebate for filling up at the gas station
  - ⑨ offering a 0.3% rebate for agricultural input

At present, there are only two agriculture cooperatives that are making a profit in Thailand. San Pa Tong Agriculture Cooperative is one of them. However, it faces a few difficulties at the same time. For instance, farmers fail to make good use of the money they borrow and then are unable to pay it back. Also, it takes time for a cooperative to evaluate agricultural projects to be implemented.

### 4.5 Findings in the Agricultural Sector

#### 4.5.1 Standards of Living

In the agricultural sector, some examples of crops Chiang Mai farmers cultivate are: rice, onion, longan,

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<sup>5</sup> Regardless of the amount of share each member holds, one person is entitled to have one vote for the election of board members in order to make the management fair.

lychee, sweet corn, pepper, pea, soybean, chilli, tomato, cabbage, cauliflower, lettuce, and potatoes. Interviews conducted in the Chiang Mai agricultural field were mainly directed to the rice, longan, lychee, and onion farmers in the San Pa Tong (lowland) and the Mae Wang District (highland) areas.

Based on the interviews it was found that farmers in Chiang Mai have sufficient access to their basic human needs - food, shelter, education, and health.

The average family size in the agricultural area is 3.5 members, meaning that each family will have one or two children and usually a grandparent that will live in their household.

Concerning education, of the 12 interviews conducted, 100% of the parents and grandparents had received primary education, but today the children continue through to secondary education and the tertiary/technical or vocational schools. Young adults who get to finish the tertiary schools usually find jobs in the service sector in the urban cities.

From the surveys, it was found that all the farmers had electrical appliances in their homes. All households had at least one television, at least one gas stove and at least one refrigerator. Some households have a car, a motorcycle, and bicycles, and others have even more luxurious items such as amplifiers. From the interviews it was found that no household spent money on buying newspapers, but the reason for this is that they can access the daily newspaper at the nearest health center for free.

#### **4.5.2 Working Conditions**

As for the working conditions, self-employment in the agricultural field is common. Out of 12 farmers interviewed, 11 farmers are self employed in rice, longan, onion, sweet corn, eggplant, and/or cucumber farming, and 25% of the farmers are engaged in other sectors besides farming, such as packing garlic, taxi driving, or dressmaking.

With regards to the farmers' working conditions, 8 out of 12 interviewed work five days a week and an average of eight hours per day. The other four farmers harvest their rice in an average of two hours per day. The amount time they will spend harvesting will depend on the products themselves.

All families interviewed have government health insurance and only 1 out of 12 has private insurance. When injured they visit the health center which is open 24 hours a day or they visit the hospital when the health center requires them to.

All farmers interviewed use pesticides but only one out 12 has had his health affected because of the use of pesticides. The reason they are not affected by the use of pesticides is because they use organic fertilizers, specifically Effective Microorganism (commonly known as EM) in small amounts and only at the nursery stage of the production process, as is in the case of onions. EM fertilizers<sup>6</sup> are bioorganic fertilizers made by microorganism technology. The microorganisms will tend to increase the microbial diversity of soils and plants therefore improving the soil quality, soil health, and the growth of crops. EM contains selected species of microorganisms such as lactic acid, bacteria and yeasts and smaller amounts of photosynthetic bacteria, actinomycetes, and other types of organisms. All are compatible and can coexist in liquid culture.

Of all the farmers interviewed, 100% expressed their satisfaction with their jobs. The majority expressed that they do not want to move to another place because the place they live is their homeland and the land is fertile.

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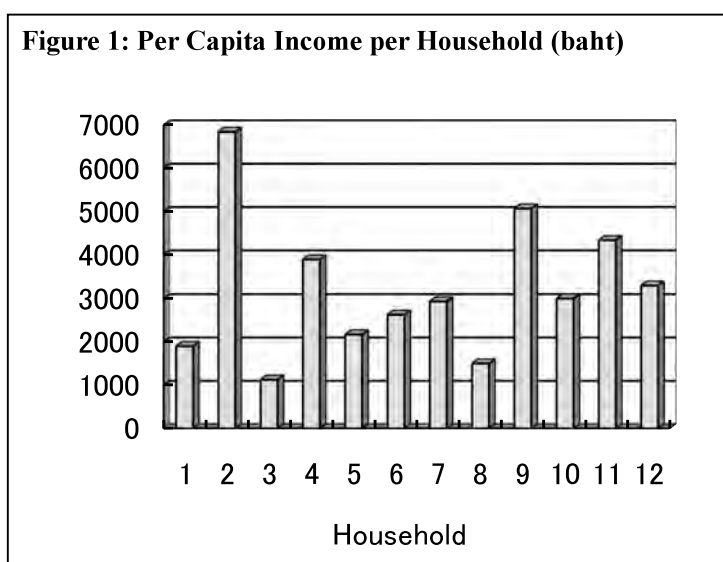
<sup>6</sup> For the definition of EM visit: [http://www.cepp.utm.my/files/filestorage/30897\\_bioOrganic\\_fpMEt\\_07.pdf](http://www.cepp.utm.my/files/filestorage/30897_bioOrganic_fpMEt_07.pdf)



## 4.5.3 Agriculture Income Generation Findings

### 4.5.3.1 Income

In San Pa Tong District, average per capita income is 3,646 baht (1 US\$ = 33.3630 baht, 2008) (Amphor Agriculture Development Plan, 2009). According to the interview, the average per capita income of the 12 households is 3,222 baht per month. Figure 1 shows the household per capita income of the households. Household number 2 enjoys the highest per capita income with 6,833 baht per month. In this household, three family members are working. The parents are mainly engaged in agriculture, and their son is working in the service sector. On the contrary, the lowest per capita income appears in household 3. In this household, four family members have 1,125 baht per capita income per month. Half of the family members are working and are engaged in the agricultural sector only.



Source: Author, Field survey (September 2009)

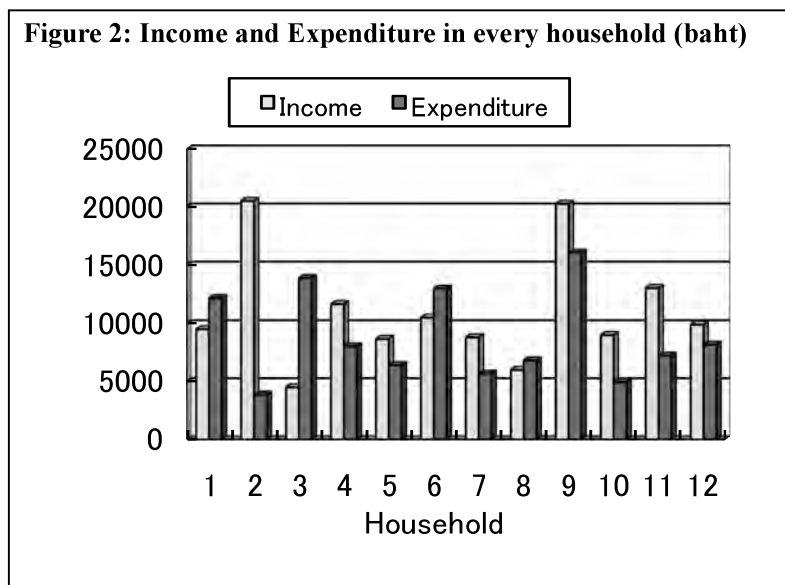
Among the farmers, those who have more sources of income or cultivate more agriculture products generate higher income.

In addition, income also depends on the number of family members employed at the same time. Generally speaking, the more family members are employed, the higher the income the household earns.

### 4.5.3.2 Expenditure

The biggest difference between income and expenditure appears at household 2, which has the highest per capita income among the 12 households. Though household 9 has almost as high an income as household 2, the expenditure

is the highest. Household 3 has the lowest per capita income as well as have the lowest income per household, but has the second largest expenditure per household. The households whose expenditure is relatively high tend to have a larger number of family members than other households. Moreover, the expenditure of the household is closely related to which sector in which the majority of the family members in the household are engaged. Although, according to Figure 2, 8 out of 12 households' income are higher than expenditure, in the long run, this is not the case. This may be due to instability of the income of farmers, instability of the market price of products, or inaccuracy of the amount of income and expenditure reported by interviewees.

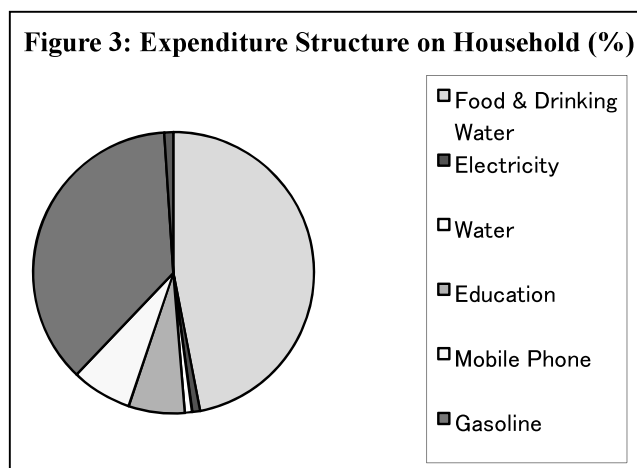


Source: Author, Field survey (September 2009)

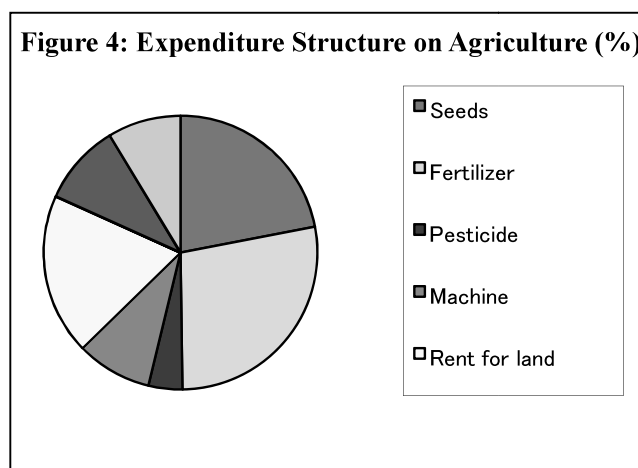
If we consider the structure of expenditure of the households, Figure 3 shows almost half of the income (47.24%) is spend on food and drinking water. The second largest part of the consumption is gasoline, which means that transportation is an important issue for the farmers as well. However, expenditure on education accounts for only a small share (6.51%). The Thai government's education policy<sup>7</sup> might explain the farmers' expenditure on education.

According to Figure 4, on the agricultural side, seeds, fertilizer, and rent of land are the main items of expenditure for farmer.

The tax expenditure is only 0.1% as a result of farmer's low income.



Source: Author, Field survey (September 2009)



Source: Author, Field survey (September 2009)

#### 4.5.3.3 Saving

According to the interview, only one farmer has savings.

It was found that savings are strongly influenced by the income and the expenditure. With very limited income, it is difficult for farmers to meet their basic human needs and engage in production. Therefore, saving money becomes difficult for them. Considering the current relationship between income and expenditure, the key to solving the low savings problem, is helping farmers to generate higher per capita income.

#### 4.5.3.4 Loan

There are several institutions that provide loans. For example, BAAC (Bank of Agriculture and Agricultural

<sup>7</sup> The Ministry of Education has launched a policy of 15 years of free education, starting from the kindergarten level through the secondary education level.

Cooperatives) plays a main role in lending money to farmers, while village organizations create village funds and agriculture cooperatives provide loan service as well.

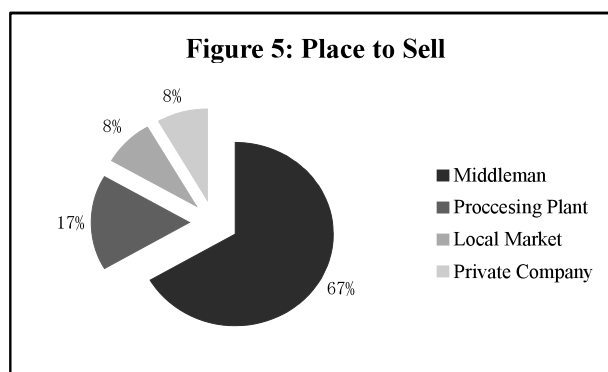
All the 12 farmers are taking out loans. Five of them (42%) are even taking out more than one loan. There are two purposes for taking out loans. One is for agricultural purposes to purchase seeds, fertilizer and machinery and for paying rent. The other purpose is household expenses, especially for paying for children's higher education.

All of the households are borrowing money from BAAC. At the same time, three of them borrow from the village fund and two borrow money from agricultural cooperatives. However, as a result of the profit from agricultural production being too small, and income being insufficient for consumption, some of the farmers are facing problems returning the loans. It is easy for farmers to access loans due to the low interest rate. Based on the results of the survey, the average interest rate is 4% per month, which is lower than the market prevailing lending interest rate (including commercial bank).

In conclusion, farmers in the low-level income group require loans making it necessary for organizations such as BAAC and agriculture cooperatives which can provide low interest rate loans. Sometimes, those organizations provide training accompanying the loan, in order to improve farmers' capability to utilize the loan.

#### 4.5.4 Market Network

Through the research, it was found that agricultural products such as rice, fresh longan, onions, or sweet corn are only sold in the domestic market. Yet, some products such as longan are processed as dried longan and exported to foreign countries, particularly China. Several intermediate wholesalers like middlemen, agricultural cooperatives, private companies, processing plants and local markets also handle agricultural products. In terms of market networks, all 12 farmers have no difficulties accessing the market. There are several ways to sell crops, such as selling to private companies, going



Source: Field Survey, September 2009

to the local market directly, bringing the crops to processing plants such as rice millers, and selling the products to middlemen who come to their farms. As shown in Figure 5 above, when asked where they sell their products, 8 out of 12 farmers answered that they sell their products to the middleman. Regarding prices set by the middleman, 6 of 10 farmers said that they think that prices are unfair for them in terms of the gap between the price that the middlemen set when they purchase crops from the farmer (farmer's price) and the final consumer price when sold in the market. Farmers who feel unfairness claimed that despite the high input to crops like seeds, fertilizers, and pesticides particularly for onion production, the farmer's price is too cheap. Additionally, for those who responded that they thought the price was fair, it could be understood that one of the reasons they think so is that they do not actually know whether the price is fair or not because they have no opportunity to ask other farmers about the price. Moreover, they think there is no problem with the price because everyone around them accepts it as a fair price.

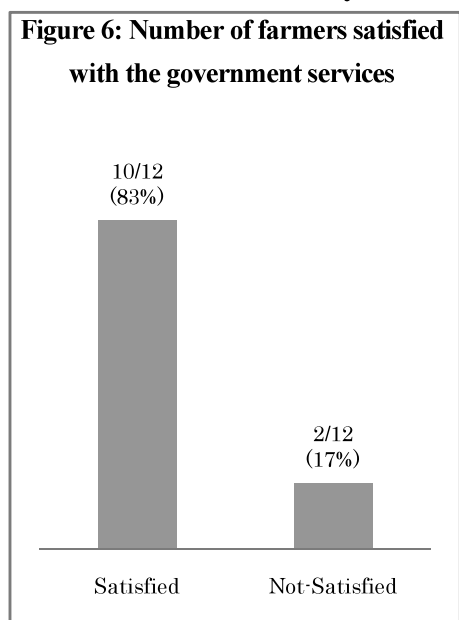
However, from the interview with the middleman, it was found that he is not always trying to extract money from farmers by price setting. All middlemen purchase crops at the same price from farmers. Therefore, farmers can sell to any middleman. Big companies set the middlemen's sale price, therefore the middlemen are not the ones setting their own prices. The middlemen not only have connections with big companies, but also with the Thai government. During periods when the crop price is low due to oversupply in the high season, the government,

starting from this year, is supporting farmers indirectly through middlemen, guaranteeing a minimum price by providing subsidies. However, some of the middlemen think that this scheme does not work well. The reasons for this are firstly, the subsidy is paid to the middlemen very late, at the beginning of the cultivation season, and thus, they need to pay the minimum price guarantee for farmers from their pockets first. Secondly, it was too late for the government to start helping farmers in the form of a minimum price guarantee.

In addition to working as buyers of agricultural products, middlemen have two roles. One is as suppliers of fertilizer, and another is as lenders of agricultural warehouses. As suppliers of fertilizer, middlemen offer fertilizer to farmers when cultivating is started. Middlemen make a contract implicitly with farmers by providing fertilizers. As mentioned above, farmers can sell their products to any middleman as the price is the same; however, in this role as suppliers of fertilizer, middlemen make implicit, but fixed contracts by which farmers are required to repay the cost of fertilizer to the middleman who provided it initially. Also, middlemen work as lenders of agricultural warehouses. In most cases, farmers do not have cool storage to keep crops fresh. In order to sell the agricultural products at a higher price, freshness of the crops is crucial, and therefore the cool storage services that middlemen provide to farmers is in high demand. However, the cost of operating cool storage is required, as well as transportation costs to collect crops and carrying them to the market. This research reveals that the gap between the farmer's price and buying price by middlemen covers more than just the middlemen's profit.

The results of the research observed different perceptions between farmers and middlemen. On one hand, farmers perceive unfairness concerning the price and believe that middlemen are making huge profits from the farmers' work. On the other hand, middlemen think it is right that there is a gap between farmers price and consumer price, as middlemen provide good facilities such as storage or fertilizer, and bear the sacrifices when providing the minimum price guarantee instead of the government.

#### 4.5.6 Services Provided by the Government and Organizations



Source: Author, Field survey  
(September 2009)

The government and other organizations, such as the agricultural cooperative, play important roles in supporting farmers to solve various issues, including those mentioned above.

Eight out of 12 (67%) of the farmers interviewed are members of the agricultural cooperatives. The reasons raised by those farmers for being members were that they can enjoy the benefits of receiving dividends, and buying groceries at the supermarket owned by the agricultural cooperative. One of the reasons given for not joining the cooperative was that some farmers consider that it is unnecessary, as they only grow a sufficient amount of crops for themselves, not to sell in markets. Another reason raised was that they can borrow money for agriculture from BAAC and it is not necessary to be a member of cooperatives because the other services are not attractive to them.

In addition, there were 5 out of 13 farmers who answered that they receive services from agricultural cooperatives or district agriculture offices. The positive reason raised was that they can visit the office to apply for loans for agriculture production or borrow money by credit to do some agriculture business. Negative reasons

were that, despite the policies offered by the government to support farmers, their procedure of implementation is too slow for farmers to receive the services, and sometimes, middlemen and community group leaders are the

actual beneficiaries of the services. Therefore they become reluctant to visit these offices.

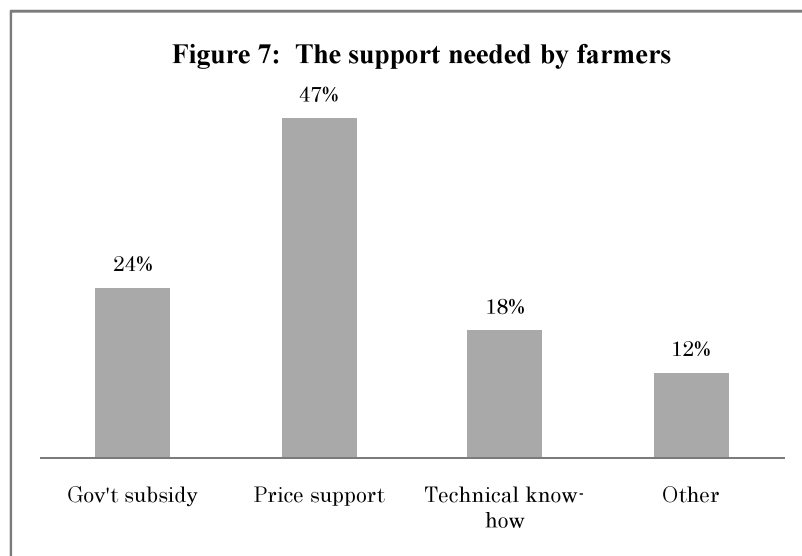
More specifically, there is the service of agriculture extension workers, who are sent as agricultural specialists by the district agriculture office to consult with farmers about issues and to record production analysis. The interview found that 6 out of 12 farmers (50%) receive these services, but the other six farmers do not. Moreover, three farmers among those who receive the services explained that the services offered by the government are only useful in the event of a disaster and do not include regular services such as providing know-how for technological transfer or consulting with farmers. Only one farmer mentioned that the agriculture extension worker conducts lessons on how to make organic fertilizers and he has attended only once. It cannot be denied that the services of the agriculture extension workers do not reach the grass roots, and there are differences in perception of the government services between the agriculture office and farmers. According to the interview at the agriculture office, they consider that their services trickle down to all farmers through the extension workers, while not all the farmers regard this as so.

Nevertheless, farmers are satisfied with the government services to some degree. As Figure 6 shows, 10 out of 12 (83%) are satisfied and two farmers (17%) are not satisfied. The majority of the reasons for satisfaction are not related to agriculture, but other aspects such as insurance policy and free electricity for usage of free basic electricity use.<sup>8</sup> All the farmers hold insurance cards, which entitle them to basic medical services for free. In addition, some other farmers are satisfied with the policy implemented by the government guaranteeing the price of onion and longan. The negative reasons raised are that the distribution of government services is unequal, as the service is only for those with easy access to it and there is no price support scheme.

Figure 8 shows the support required by the farmers. The most needed support is price support, with the second being government subsidy and the third technical know-how. The reasons are related to the perceived unfair pricing practices by middlemen and the low-prices caused by oversupply of products. Also, some farmers believe that they can manage the production know-how by themselves as they believe that they have already acquired the skill through experience in their field. They even consider the increase of the production function by technological advance unable to solve the current most serious problem of oversupply. Farmers rather focus on price support, which can immediately deliver benefits.

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<sup>8</sup> The Thai government provides all households with a certain amount of electricity per month for free, as one of their pro-poor policies.



Source: Author, Field survey (September 2009)

Note: Multiple choices are given to interviewee. This ratio is calculated with the total number chosen.

## 4.5.7 Infrastructure

### 4.5.7.1 Irrigation

Infrastructure is divided into two parts: irrigation and telecommunication infrastructure. For irrigation, of all the 12 farmers who were interviewed, 7 of them (60%) said they had enough water for farming since a long time ago or just recently. Some mentioned that the government has renovated the existing irrigation. Other said that they have only had enough water for farming for the past three years. Those farmers who said that they do not have enough water for farming (40% of the respondents) said that in summer, the water level, especially in Mae Win, is low, meaning they have difficulty getting the water. They need to pump up the underground water, which requires a machine and the purchase of gasoline.

### 4.5.7.2 Telecommunication

For telecommunication, the study is focused mainly on whether or not the farmers have access to the internet and cell phone services. The reason for this is that if they have access to internet or a cell phone, they have the advantage of gaining information from outside the community, such as prices or markets for their products etc. The study found that only one of the respondents does not use a cell phone. As for internet access, only one respondent has access to the internet at home. However, 60% of them said that their children have access to the internet at their university or work place, meaning that farmers also indirectly have access to internet as their children may assist them in finding information on the internet.

## 4.5.8 Farming skills

The field observation found that the agriculture sector in Chiang Mai is still labor intensive and the technology is still less sophisticated. Instead of using a machine, some farmers are still cultivating rice using traditional tools like the sickle. This is also analogous with the fact that of all the 12 farmers interviewed, 10 of them learned farming skills from their families. One of them even learned farming skills by himself. Only one respondent, who had a contract with a beer producing company, has been trained by the company on how to grow rice.

Although their families have been farmers for generations, the majority of Chiang Mai farmers do not want their children to continue doing farm work. Eleven out of 12 respondents said they do not want their children to be farmers. Only one respondent who happens to hold a large plot of land wants her children to be farmers. There are many reasons that farmers do not want their children to work on the farms. For instance, farming is considered hard work and earns less income compared to other professions. Moreover, the income is not stable and less social welfare is provided. Children have no interest in farming. The reasons also include the effect of chemical fertilizers and pesticide on farmers' health.

Most of the farmers want their children to receive higher education and work in other well paid sectors like the service or industrial sector. It is in accordance with the general trend that all the farmers interviewed received only a primary school education, whereas most of their children obtain a high school education and some have even finished university.

#### **4.5.9 Environment**

Environment is one of the three parts of sustainable development. The agricultural sector, specifically intensive cultivation through the heavy use of fuel, chemical fertilizers and pesticide, is one of the main environmental polluters.

As mentioned earlier, many farmers in Chiang Mai are still using chemical fertilizers and pesticides, although there are efforts from the district office and the TAO to encourage the use of organic fertilizers. However, farmers seem to be aware of the negative effect on the environment. Ten of the 12 respondents have experienced damage to their crops as a result of hail. Some said they are aware that the climate is getting hotter every year. The TAO's campaign on environmental problems also plays an important role in raising the people's awareness. Because of this awareness, some farmers have shifted to using organic fertilizers like EM. Other ways that the farmers protect the environment are by separating their garbage before disposal and forming volunteer groups to work on environmental issues.

## **5. Handicraft Sector**

### **5.1 Overview of Handicraft Sector in Chiang Mai's Economy**

In addition to the agricultural sector, handicraft is also another core pillar of Chiang Mai's economic activity. In Chiang Mai, the industrial sector has the second largest number of employees after the service industry, and it is estimated that around 20% of the total work force belongs to the industrial sector. It is understood that 2,192 factories are running, with 39,478 workers, and the amount of capital they have registered is 22,986 million baht (about US\$673.5 mil.). Chiang Mai plays the role of an Asian hub for handicrafts, and they can be seen at many wholesale agents in town. Also, with a proud



**Photo 2: Handicraft workers making ships (OTOP)**

heritage of being made with workmanship and skill passed from generation to generation, handicrafts in Chiang Mai are the world's largest center of cottage and furniture making industries.

Handicrafts in Chiang Mai are diverse, with a wide variety of characteristics. Some remarkable handicraft activities in Chiang Mai include wood cropping, silver engravings, Lanna paintings, and Saa paper products. The research sites for this investigation were: Ban Sob Win Handicraft Group which makes wooden ships that have been identified as five star products of the One Tambon One Product (OTOP) movement; San Pa Tong Woodcraft Cooperative, which makes wood cropping products; Chiang Mai Doll Making Center which not only sells to the domestic market but also exports their products to foreign countries; Baan Benjawan Handicraft Center which makes and sells scented candles and processed dough accessories; Jolie Femme Silk Garment Production which makes silk products such as cloths or linen; Borsang Umbrella Factory; and Thai Handicraft Village that utilizes Saa paper used in the umbrella manufacturing. In addition, we visited Chiang Mai's special handicraft region called Baan Tawai Handicraft Center where various kinds of OTOP products are manufactured and sold. Thus, handicrafts in Chiang Mai include diverse kinds of activities. In particular, woodcrafts in Thailand cannot be compared with that of any products of other countries. This is because Thai woodcraft is one product that has evolved under the influence of the history and culture of the region.

However, despite history and tradition, the handicraft sector is now facing several difficulties. One is the marketing of products, and another one is the decrease in tourism due to the political situation and global economy. As will be shown below, however, handicrafts have a close relationship with marketing and tourism, and thus some measures could be taken to overcome the current situation and to preserve tradition.

## **5.2 One Tambon One Product (OTOP)**

The Thai government implemented the One Tambon One Product (OTOP) Development Policy that was initiated by the former Prime Minister Thaksin Shinawatra in 2001, in order to improve poverty issues in rural areas. It was based on the model of One Village One Product (OVOP) in Oita Prefecture, Japan. OTOP aims not only at economic development but also at nurturing leadership in the local community and self-reliance with three concepts: 1) local, but global; 2) self-reliance and creativity; and 3) development of human resources.

In particular, OTOP aims to develop products with sufficient quality and characteristics that add high value by utilizing local resources and local wisdom. This will eventually generate employment and income for the local community, and create a self-reliant, strong community. The products, which are reviewed and approved, earn the right to use the OTOP brand which sets them apart from other products. The OTOP brand, because it is licensed by government, is considered by consumers to be a safe product. The use of the brand also enhances consumers' interests (Malee 2008).

The first OTOP village was set in Baan Tawai. According to the PR manager, Mr. Ponchangn Praphan, there are more than 300 entrepreneurs in Baan Tawai, running their own shops creating their own products utilizing their skills. As a contribution of Baan Tawai to Chiang Mai's economy, Mr. Ponchangn mentioned that not only is income distributed within the village but also the district and the province. In addition, Baan Tawai is providing opportunities to learn skills for people who are uneducated or unemployed. It seems that Baan Tawai is not only a place of income generating activities, but also there are indications that a positive relationship is being built gradually between OTOP and the community.



### 5.3 San Pa Tong Woodcraft Cooperatives

In San Pa Tong district, there is a woodcraft cooperative comprised of 181 members. The members of the cooperative can operate shops both at the location of the cooperative and at home. Self-employees who own a shop at the cooperative are required to pay rent for the space. The rent depends on the size of the shop, but in general it is between 200 and 500 baht per month and is paid directly to the landlord.

In terms of operating fees, along with rent for the space, shops also have to pay a commission fee to the cooperative. The commission fee is 3% of the total sale. As long as producers are members, this commission fee must be paid, even if they run their shops at home. Furthermore, if any member sells products without informing the cooperative within 5 days, they must pay an additional fine.

San Pa Tong Cooperative provides services to the member such as:

- 1) Preparation of documents for shipping
- 2) Coordination with government officers
- 3) Searching for materials
- 4) Providing loans (however, very few loans are provided)
- 5) Searching for markets for products
- 6) Participation in trade exhibitions
- 7) Approaching the community about how to improve package and design
- 8) Offering training, such as hiring experts to train members, and teaching accounting and marketing skills (free of charge)
- 9) Skill transfer

The artisans set the price of the woodcrafts and the final price is decided by negotiation between artisans and customers. In most cases, artisans directly sell their products to customers who visit to their shops or in the domestic market. In addition, they sometimes sell woodcraft products on the internet. Generally, 30-50% of the price covers the cost of raw materials, and the rest is for the artisan's skill. Therefore, it is considered that skill is the key for the artisans to earn a high income. High skill level contributes to enhancing the value of the products, and as a result, it raises the competitiveness in terms of attractiveness for buyers, not only within the domestic market, but also the international market.

### 5.4 Findings in the Handicraft Sector

For our research we divided the interviewees listed above in section 5.1 into three categories as follows:

- a) *Owners* of factories or production plants
- b) *Self-employed workers* who are skilled artisans and who work independently, manufacturing and selling their own products.
- c) *Employees* of factories, production plants, or of the self-employed workers mentioned above.

#### 5.4.1 Standards of Living

The handicraft industry in Chiang Mai is very popular among nationals and foreigners. As stated earlier, the industry involves wood crafting, production of Saa paper, hand painted umbrellas and silk, and silver engraving, among other products. The industry in Chiang Mai relies largely on OTOP.

Living standards for those engaged in the handicraft industry satisfy their BHN (food, shelter, education, and health) and some enjoy more, as is the case with the self-employed workers, of which 16% have access to the internet (as opposed to the handicraft employees, none of whom had access).

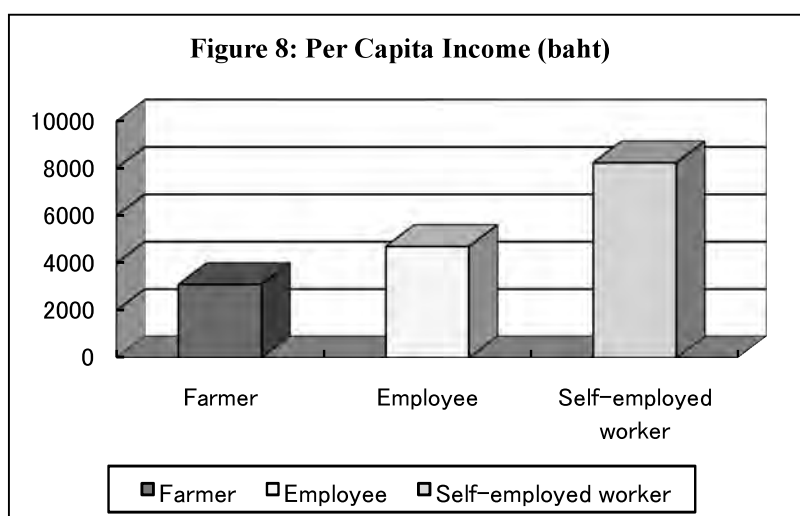
Family size of employees in the handicraft average 3.5 members, meaning one or two children per family, and a grandparent or other relative also living in the household. They have received at least primary education and 5 out of 21 of the interviewees had received secondary and tertiary education. As for the self-employed workers interviewed, all have received at least a primary education and 2 out of 12 had received secondary and tertiary education.

The majority of the interviewees have at least one television, radio, motorcycle, bicycle, refrigerator, and gas stove. Some of the interviewees have cars and others have personal computers, washing machines, CD players, DVD's, fans, etc. Compared with the agricultural sector, it was observed that the employees of the handicraft sector enjoy more luxurious items in their households. This can be attributed to the difference in income generated in each sector.

### 5.4.2 Working Conditions

Concerning the working conditions of the people involved in the handicraft sector, according to the division of self-employed workers and employees mentioned before, self-employed workers work 6.7 hours per day, an average of 6.7 times a week, and all are registered in the government health insurance system. Employees work an average of eight hours per day, five days a week, plus overtime when necessary. But it is relevant to mention that in the Jolie Femme Silk Factory, because of the economic crisis affecting the companies' finances, the owners decided to cut the working hours of all workers rather than resorting to lay-offs. Consequently, presently there is no overtime work. In contrast, both the male and female daily wage employees of the Ban Sob Win Handicraft factory have the opportunity to work overtime hours and even during weekends and holidays to generate extra income. Based on the interview conducted with the manager of the center, it was found that employees usually opt for this working style and he himself expressed that he works for extra income to support his family and household. All the employees in the handicraft sector are covered by the government health insurance.

### 5.4.3 Handicraft Income Generation Finding



Source: Author, Field survey (September 2009)

### 5.4.3.1 Income

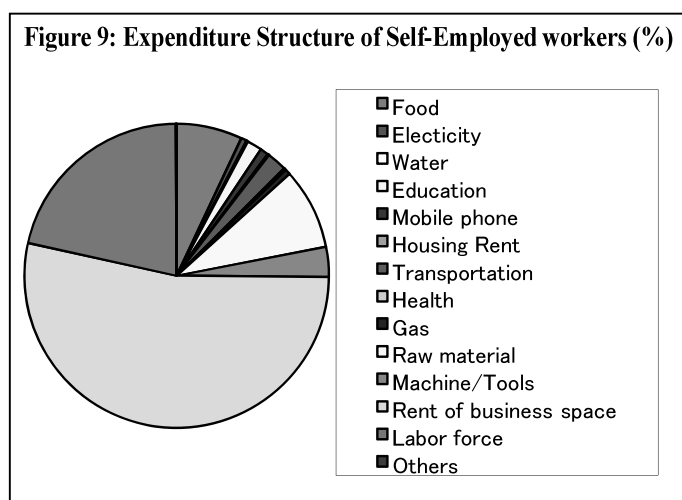
The per capita income both of self-employed workers and employees is higher than that of the farmers. Figure 8 gives a first approximation of the magnitude of income inequality among farmers, self-employed workers, and employees. The average per capital income of farmers is 3,097 baht per month. In contrast, the employees' average per capita income is 1.52 times of this. However, self-employed workers generate an income of 8,240 baht, which is nearly 2.66 times of farmers' per capita income per month.

This income inequality causes several problems. For instance, the most direct problem is that the next generation does not want to inherit their parents' occupation. Moreover, poor farmers experience difficulties meeting their basic human needs, such as access to health services. They also lack in bargaining power with the middleman.

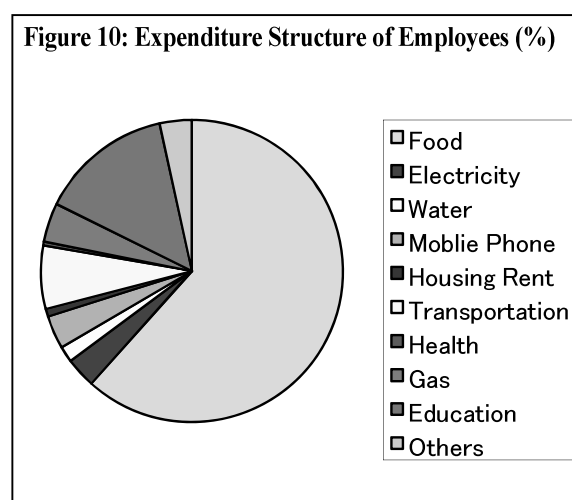
### 5.4.3.2 Expenditure

According to the structure of the expenditure, over half of the self-employee's expenditure is for rent of their business space (53.37%) and nearly a quarter is spent on labor (21.45%). A majority of the income earned by self-employed workers is spent on their business. Though employees' per capita income is 1.52 times higher than farmers' incomes, like farmers most of their income is spent on food (61.61%). However, the comparison found that the employees pay relatively more attention to education (14.22%), which receives the second largest amount of the expenditure.

Different income levels have different expenditure structure. The low-income class tends to spend more on life-sustaining basic human needs, in particular food. The middle and high-income classes have more opportunities to utilize their income to pursue a higher quality of life.



Source: Author, Field survey (September 2009)



Source: Author, Field survey (September 2009)

### 5.4.3.3 Saving

Eleven out of the 18 employees (61%) have savings, while among the 11 self-employed workers, 5 (45%) have savings. In addition the amounts of these savings are much higher compared with the farmers. Also, the study found that higher net per capita income<sup>9</sup> can directly improve the savings level.

<sup>9</sup> Net income is the income that a firm has after subtracting costs, including tax expenses, from the total revenue. Also, it is called net profit.

#### **5.4.3.4 Loan**

The high savings ratio of self-employed workers and employees in the handicraft sector compared with that of farmers is directly related to the relatively low ratio of financial loans taken out by self-employed workers. Three out of 11 (28%) self-employed workers borrow money from either BAAC or the village fund to finance their business.

The low loan ratio can also be attributed to two other main factors: the first is the fact that self-employed workers usually save money before starting business, and the second is that, for small and medium enterprises (SMEs), it is difficult to obtain long-term loans from financial institutions, especially commercial banks.

The reasons self-employed workers have difficulties paying back the loans may include lack of financial support from the government and financial agencies, intensified price competition in the market, and national and international economic recession. According to the field survey, one of the self-employed workers has yet to repay the loan.

#### **5.4.4 Market Network**

Research was conducted at several handicraft sites. At these sites, three kinds of diversity were found: 1) diversity of scale of the market and place of sale; 2) diversity of marketing strategies; and 3) diversity of stakeholders. In terms of diversity of market scale and place of sale, according to the interview with handicraft sector authorities, there are both wholesale and retail levels in the sale of handicraft products, and these products are sold in both the international and national market. Basically, wholesale is more likely to occur in the international market and retail in the domestic market. Secondly, in terms of diversity of marketing strategies, two types of marketing methods were observed. One is a ready-made method in which producers make handicraft product in advance and customers visit their shops to purchase products directly. The operation methods of most of the cases follow this type, and therefore among the 12 self-employed respondents there are none who experience difficulties accessing the market. This case was also seen in businesses such as Baan Tawai Handicraft Center. Another one is made-to-order style marketing. Made-to-order is a method by which the producer makes the products after receiving the order from the customer. The production side makes the products according to the needs or preference of the customer. This was seen in Ban Sob Win Handicraft Group, which makes five star OTOP wooden ships. The final method is diverse stakeholders. Producers sell their products not only to tourists, but also to department stores, other retailers, middlemen, etc.

Through the interview with people engaged in handicraft activity, several difficulties of the handicraft sector became apparent. Firstly, most of the production sites consider marketing as the most serious problem. According to San Pa Tong Handicraft Cooperatives, this is because handicraft artisans cannot find places to sell or cannot determine appropriate prices. At other times, a relationship was found between the handicraft sector and the tourism industry, and between the handicraft sector and the international or national economy. In terms of the relationship with tourism, it can be said that by nature the tourism sector is volatile to external shock. With the coming of the rainy season, which occurs from April to October, the number of tourists visiting Thailand decreases. As explained above, the sales of retail and ready-made products to tourists decline during that season. In addition to the low season caused by the rain, the situation of the international and national economies also affects handicraft activity in Chiang Mai. In particular, the global economic crisis has attacked the handicraft sector severely in terms of number of tourists, who are the main profit resource for this sector. Not only in terms of the number of the tourists, but also due to the global financial situation, exporting products becomes less profitable. Therefore, market share is changing for some products. In the case of Chiang Mai Doll Making Center, in the past, the monetary unit of market share was 70% for exports, and the remaining 30% was for the domestic

market. However, currently exports have decreased to 40%, and instead sales in the domestic market have increased their share to 60%. From this case, the balance between the domestic and international markets can be used as one of the means to minimize risks from external shock.

In order to maximize profits in such a situation, various provisions are taken in each of the businesses. Baan Benjawan Handicraft Center has tried to reduce production costs as much as possible by using equipment that does not require high initial investment, and simple tools such as iron, which is used to make a candle's surface smooth. Besides this, to combat the decrease in demand accompanying the decrease in tourists due to the global crisis, Jolie Femme (which makes silk products) has tried to implement a work-sharing system which allows employees to keep their employment by reducing the employees' working time instead dismissing them.

#### **5.4.5 Seasonal Effects**

The handicraft sector also faces difficulties in the low tourism season, when the number of tourists, who are important customers of the handicraft sector, decreases. In addition, the global economic crisis and the domestic political conflict of last year and the beginning of this year triggered their further decrease. All of the self-employed workers answered that they are affected by the low tourism season and these unexpected incidents. However, the impact on their businesses is less compared with the agricultural sector, because handicraft products can be stocked, unlike perishable agricultural products. Moreover, (aside from those unexpected incidents) as the tourism season is relatively predictable, they are able to conduct business with due consideration.

In the case of Baan Tawai Handicraft Center, the PR manager mentioned that as a measure to deal with seasonal effects, even when there are only a very few tourists coming, he opens the entire the shop to tourists so that they can see the variety of products on offer, to make Baan Tawai more attractive. It is considered that tourists can take home a good reputation for Baan Tawai and this will eventually expand their market. This strategy is considered one of the key reasons why Baan Tawai has been growing as one of the most popular destinations.

#### **5.4.6 Services of Government and Organizations**

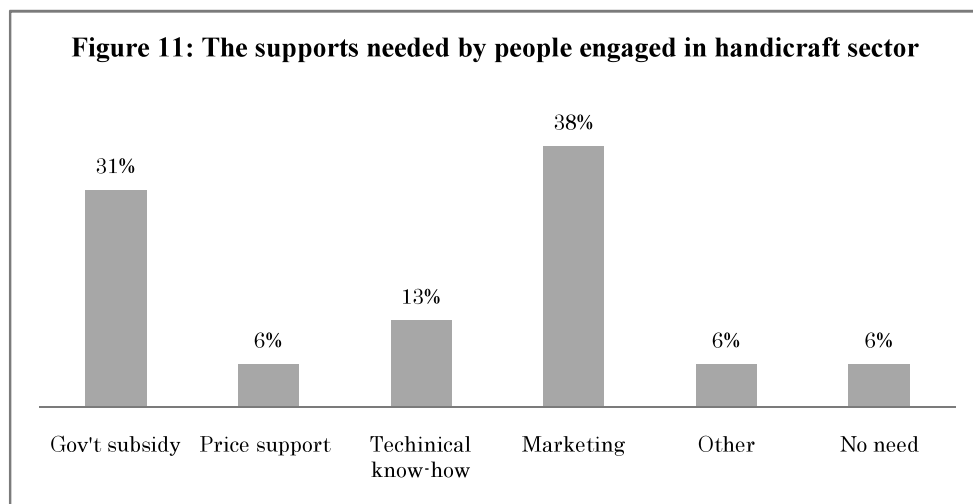
The government and other organizations, such as San Pa Tong Handicraft Cooperatives and Baan Tawai Woodcraft Cooperatives, also give support to people engaged in the handicraft sector.

Among the 12 self-employed workers, 3 belong to San Pa Tong Handicraft Cooperatives, 4 to Baan Tawai Woodcraft Cooperatives, and 1 to Saa-paper Organization. Among the 21 employees, there are only 6 employees (29%) who belong to an organization. The organizations to which these employees belong include agriculture cooperatives, or BAAC, for purposes such as borrowing money to do farming at home in addition to their job in the handicraft sector. The employees do not need to pay attention to the marketing whilst being employed at factories, and therefore it is not necessary for them to belong to those cooperatives related to handicrafts.

All the self-employed workers, who belong to San Pa Tong Handicraft Cooperatives or Baan Tawai Woodcraft Cooperatives, are satisfied with the assistance they receive in marketing, which is too difficult to manage as individuals. These cooperatives help self-employed workers to photograph their products and upload them to their websites. The self-employed workers appreciate the handicraft cooperatives giving them various opportunities to expand their market and receive more customers directly.

Figure 12 shows the support required by self-employed workers in the handicraft sector. The most required type of support is marketing, the second is government subsidies, the third is technical know-how, and the fourth is price support. Compared with the agriculture products, handicraft products are different from each other, as each product is made by hand, making it unique. Therefore, prices vary from product to product and self-employed workers can bargain with customers to determine these prices. Therefore, whilst price support is not

their priority, marketing is considered essential to expand their sales. The reason that government subsidies are required is also related to marketing. Self-employed workers want the government to provide more chances to promote tourism for the whole region, which will lead to stronger marketing. Technical know-how is needed to increase the variety of the products and boost the quality to meet international standards, which can attract foreign tourists. On the contrary, one person pointed out that governmental support is not required as the benefits of governmental service only reaches big companies. In the interview, it was clearly shown that people are focusing more on marketing to increase their sales and to expand their markets.



Source: Author, Field survey (September 2009)

Note: Multiple choices were given to interviewees. This ratio is calculated based on the total number chosen.

#### 5.4.7 Infrastructure

Infrastructure in the handicraft sector is quite different from that of the agricultural sector. The focus is on internet access and transportation. Unlike farmers, handicraft self-employed workers have better access to the internet. Five of the 12 respondents said they have access to internet experience and no difficulty in transporting their products and raw materials. Customers always come to pick up the products they purchase at the production site, and suppliers of raw materials provide delivery services on request.

#### 5.4.8 Working Skills

Handicraft workers are classified into two categories: self-employed workers and employees of handicraft factories, which in the context of our field survey included the doll and candle making factories, the silk producing factories and the umbrella making center. The ways in which these two types of workers acquire their skills to perform their jobs differ.

For the self-employed workers, most of them learn their skills from their family, their neighbors or from the expert in the village. In the study, 12 self-employed workers were asked about how they acquired their skills and seven of them responded 'family'.

In contrast, 70% of the 21 employees of the handicraft factories interviewed said they learned their skills at their working places for free. Some small portion of them also learned from their family. Only one responded that they paid to learn their skills.

However, workers in the handicraft sector, once again, expressed that they do not wish their children to work

in this sector, giving reasons such as the low income and lack of stability compared with other jobs such as that of a government official for example. They also mentioned that their children are not interested in handicrafts nor do they possess enough patience, as the production of handicrafts requires a high level of concentration.

#### **5.4.9 Environment**

Through the interviews, most of the self-employed workers and employees in the handicraft sector (24 of 32) expressed their concerns about the environment. One reason raised was the fact that their work is dependent on natural resources. Others claimed that they love nature and the environment is good for people, or they are concerned about the next generation.

In order to protect the environment some factories teach the workers to separate garbage or create appropriate places to dispose the factory's waste. Workers themselves also cooperate in environmental preservation. In the interview, some workers said they try to reduce their waste as much as possible. They also make efforts to turn off lights when they are not required. They reduce the use of gas stoves in production, or dispose of their waste in the designated places.

For woodcraft workers, because their work involves cutting down trees, they said they try to use only dried wood and the legal wood for crafting. They also recycle waste from wood and bamboo. This recycling includes making bamboo baskets, or using the dust from wood as an organic fertilizer. Other said they grow the trees needed for crafting in their own garden, to be used in the future.

## **6. Conclusion**

Chiang Mai's economy is very well diversified. In this research, the agricultural and handicraft sectors were observed in particular. The agricultural and handicraft sectors cannot be compared directly as their context and functions differ; yet in some way these sectors are interrelated with each other. Both agriculture and handicrafts have weaknesses and strengths, as well as challenges and future prospects. Some challenges found through this research were seasonal effects, annual floods, and market network. Workers in both the agricultural sector and the handicraft sector make efforts to utilize various devices to manage their business and lifestyles under the given circumstances. At the same time, there are some efforts being made that are considered positive indicators of the stakeholders' own awareness about their future. It is necessary to implement appropriate measures to overcome various challenges; however, sustainability should be taken into account.

Moreover, it was found that the influences of the global economic crisis and political instability in Thailand have affected Chiang Mai's economy. Because of this, the number of tourists in Chiang Mai has decreased. Also, the agricultural and handicraft sectors have faced some problems. For example, exports of some agriculture products to Japan have decreased. Handicraft products are attractive to nationals and foreigners, but the problem is production is too highly concentrated within the same or nearby markets, preventing the complete sale of products and thus creating oversupply. Some industries have decided to seek markets abroad through exports, but some other farmers and self-employed workers need additional support for doing this.

From an economic perspective, the study found that farmers generate less income than workers in the handicraft sector. The reasons are that farmers rely solely on one or two products like longan and rice, and that they are rarely engaged in sectors other than the agricultural sector. The fact that they depend on only one or two products makes them vulnerable to price fluctuation, especially price drop when production is oversupplied; or

when the area suffers from natural disasters like flood, drought or hail which decreases their income. For workers in the handicraft sector, income mainly depends on tourism. This makes both sectors vulnerable to external shocks, such as global crisis.

In terms of the market network in the handicraft sector, exploring the potential of both national and international markets, such as the Chinese market, is one of the significant key issues. In the long run, competition within a limited market can be a threat for the handicraft sector and that threat may endanger economic sustainability in Chiang Mai. In order to avoid this situation, more competitive skills should be enhanced through skill development training. This will strengthen the handicraft sector by taking advantage of the originality of 'Thainess', which has been built up with its long history.

Farmers and people in the handicraft sector are trying to make efforts to sustain their jobs to generate income to live a life that satisfies at least their basic human needs. However, specifically in the agricultural sector, the fact cannot be neglected that people are facing some anxieties because of their jobs. To improve this situation, they seek substitute products or other jobs to enhance their living standards. More stability in their jobs/income is needed to allow farmers to be able to continue their work and support agricultural activity.

In the social aspect, Chiang Mai society as a whole is changing by the influence of modernization. It could be perceived based on the interviewees. Even though they have primary or secondary education, they expressed that they want their children to have higher education, hoping that they will work in other sectors which are considered to generate higher income. Likewise, their children themselves are not interested in taking over the jobs in the agricultural or handicraft sector, which might affect the sustainability of the two sectors.

Chiang Mai people involved in the agriculture and handicraft sectors have decent standards of living. Even though farmers in Chiang Mai have less income than handicraft workers, families from both sectors have electrical appliances and other household items that make their lives more comfortable. One of the reasons is because based on the interviews done in both sectors, it could be understood that workers enjoy very much the activity they are involved in. Because of this, their performance is more effective and output can be significant in quantity and quality. Moreover, the government also supports Chiang Mai people regarding health insurance, free electricity for minimum usage and making primary education compulsory through policies. On the other hand, it was observed that they do wish more governmental services for their job. Apart from this, interviewees expressed the satisfaction with this government support. Taking all of this into consideration, standards of life of Chiang Mai people are at least 'fair' or for some can even be considered 'good'.

For the environmental aspect, people do have some awareness concerning the environment. Local governments also carry out campaigns such as tree planting and garbage separation among others. In addition, local governments promote the use of organic fertilizers and place regulations on the use of woods. However, despite the governmental regulation, deforestation is likely to become a concern if production becomes large scale. In the agricultural sector, most of the farmers are using chemical fertilizer even though organic fertilizers are available, due to the lower productivity found with the use of organic fertilizers. It can be expected that the awareness created among the local people will motivate them take actions to maintain the environment.

It could be said that the people of Chiang Mai lead productive and happy lives. Even though they face some difficulties, they value the opportunities that this lifestyle provides them. Their spirit can be the foundation to support the Chiang Mai economy.

Based on the field research, it can be concluded the definition of sustainable development in the Chiang Mai local context is the development process in which all the Chiang Mai people seek and achieve economic and social levels that ensure them their basic human needs, improved lifestyles and feelings of happiness and satisfaction as they accomplish their daily work and responsibilities. During this process for reaching such



standards of life, the factors and means utilized by the community do not compromise the natural resources and ecosystems, thus the environment is not endangered and there is a guarantee of at least the same standard of life for future generations.

## **7. Recommendation**

From the facts found throughout the research, some mechanisms can be recommended for the sustainability of Chiang Mai's agriculture and the handicraft sectors. These recommendations can be achieved by addressing each of the stakeholders. As for recommendations for the farmers and the handicraft workers they are as follows:

- 1) Diversify activities and include more value-added products.
- 2) Increase differentiation and innovative ideas with higher technology.
- 3) Industrial clusters should be strengthened to increase production efficiency.

First, farmers and handicraft workers should diversify their activities so they can generate higher income. Specifically, farmers should not rely solely on one product, such as relying too much on fresh longan or rice. They should grow a variety of crops so that they can generate income throughout the year. This diversification may also reduce risks when natural disasters or price drops take place. Moreover, to enhance risk dispersion, value-added products should be further promoted. Second, more differentiation and innovative ideas are necessary to expand the limitations of current markets. This may be achieved utilizing higher technology for production. Third, both, the agriculture sector and the handicraft sectors could take advantage of the benefits derived from forming industrial clusters. With industrial clusters, the producers doing similar work in the same regions (e.g. agricultural products or artisan products generated in same villages) can learn from each other through formal communication (job meetings, conferences at common ventures, etc.) and through informal communications (such as get-togethers at social events and informal conversations). In this way they could learn about each other's specialization and be able to advise each other with the capacities that each one possesses. Advantages could be generated as whole since the networking would allow them to work as a single team. They would increase effectiveness and reduce production costs. Spillover effects, where one producer can contribute to other producers would create a kind of agglomeration economy and all the producers in the same region could benefit instead of having to endure such disadvantages as over production.

The recommendations above mentioned couldn't be achieved solely by the local people. Government support (central and local) is necessary to make both sectors sustainable. The following recommendations are for the central government and for local governments to implement:

- 1) To make sure the services provided by the agricultural office reach the local people.
- 2) Implementation of evaluation systems at the central and local levels.
- 3) Central and local governments should seek policies to mechanize the agriculture sector.
- 4) Introduction of policies to diversify agriculture and handicraft products.
- 5) Control of the quantity of production in both sectors in accordance with a price guarantee scheme.
- 6) To deal with income distribution inequality, comprehensive and supportive policies are required.
- 7) Effort to fill the perception gaps between farmers and middlemen.
- 8) Research to enhance the productivity of organic fertilizers.

First, for the central and local governments, it is important to make sure that the services of agricultural office (service of agricultural extension workers) reach the local people. Second, the central government and local

governments should improve the evaluation systems to hear the real voices of the people and to make services more accessible. Third, both the central and local governments should seek policies to introduce more technology in the agriculture sector and offer competitive salaries comparable to those offered in the cities. These would attract the younger generation; otherwise the agriculture sector will likely face serious problems in the near future due to an aging population and absence of young, educated people, resulting in an agriculture sector that cannot be sustained. Fourth, policies to diversify products and control the quantity of production should be introduced in accordance with a price guarantee scheme. These will solve the difficulties of a surplus of crops during the high season in the agricultural sector and competition among sellers in the handicraft sector.

Next, to deal with the income distribution inequality, comprehensive and supportive policies are required. These would include welfare policies to directly improve the well-being of poor people, price guarantee policies to correct price distortions, reform policies to bring about the structural changes in distribution of assets, and access to income generating (employment) opportunities. These kinds of support are highly related to economical sustainable development. In terms of the social sustainability, it is necessary that there be a good relationship among the various stakeholders.

In order to enhance the relationship between farmers and middlemen in the agricultural sector more effort put toward filling the perception gap should be implemented. An effective way is to open information through an internet service. It could be assumed that good communication between farmers and middlemen would make their activities smooth and transparent.

Regarding the environment, since the pollution from the use of chemical fertilizers and pesticides is still an issue, more research to enhance the productivity of organic fertilizers is needed to induce farmers to shift from the use of chemical fertilizers or pesticides to organic varieties.

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## Appendix

### A.1. Field Work Itinerary

Date	Time	Site Name	Remark
Sep 21	9:00-12:00	San Pa Tong District Office	courtesy visit and interview with district chief
	14:00-16:00	Thung Sa Toke TAO Office	courtesy visit and interview with TAO's chief of staff
	17:00-18:30	Baan HuaRin Village Headman	interview
Sep 22	9:00-12:00	Mae Win TAO Office	courtesy visit and interview with TAO's chief of staff
	14:00-16:00	Mae Wang District Office	courtesy visit and interview with district chief
	17:00-18:00	Mae Sapok Village Headman	interview
Sep23	9:00-12:00	San Pa Tong Agriculture Cooperative	interview with managers
	14:00-16:00	San Pa Tong District Agricultural Office	interview (farmer consultation and policy)
Sep 24	9:00-12:00	Rice and Longan Farmers in San Pa Tong District	interview (divided into two sub-group to interview rice and longan farmers, )
	14:00-17:00	Baan HuaRin Market Farmers around Baan HuaRin Market	interview (one sub-group interviewed Baan HuaRin market management; the other interviewed farmers)
Sep25	9:00-12:00	onion and longan farmers in Mea Win (High Land)	interview (divided into two sub-group to interview rice and longan farmers, )
	14:00-17:00	Ban Sob Win Handicraft Group	interview the owner and employees
Sep 28	9:00-12:00	San Pa Tong Woodcraft Cooperatives	interview the management and self-employed workers
	14:00-17:00	Chiang Mai Dolls Making Center	interview the owner and employees
Sep 29	9:00-12:00	Baan Benjawan Handicraft Center	
	14:00-17:00	silk garment production	interview the owner and employees
Sep 30	9:00-10:30	Borsang Umbrella	interview employees and self-employed workers
	11:00-12:00	Thai Handicraft Village	interview self-employed workers
	14:00-17:00	Baan Tawan Handicraft Center	interview shop owners and self-employed workers

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